

WHAT IS CLAIMED IS:

[1] A discharge control unit comprising: a heating portion including one or a plurality of heat-generating bodies and driver ICs electrically connected to one or a plurality of heat-generating bodies and caused to generate heat by flowing an electric current to an optional point of one heat-generating body or selectively flowing the same to plurality of heat-generating bodies; and a heat generation portion insulating film covered on at least the heat-generating bodies; and discharge electrodes, to which voltage is applied, disposed at the heat generation portion insulating film so as to correspond to the one or a plurality of heat-generating bodies; wherein discharge is carried out from discharge portions of the discharge electrodes selectively heated by the heat-generating bodies.

[2] A discharge control unit according to Claim 1, wherein the discharge control unit includes an induction electrode formed so that the induction electrode is spaced from the discharge electrode and is insulated from the discharge electrode.

[3] A discharge control unit according to Claim 1 or 2, wherein the discharge electrode includes a plurality of individual discharge electrode portions and a common electrode portion to which one-end portions of the plurality of individual discharge electrode portions are connected.

[4] A discharge control unit according to Claim 3, wherein the individual discharge electrode portions of the discharge electrode are provided with split electrodes divided into a plurality.

[5] A discharge control unit according to Claim 3 or 4, wherein the width of the common electrode portion is formed to be wider than the width of the individual discharge electrode portion.

[6] A discharge control unit according to any one of Claims 1 through 5, wherein the plurality of individual discharge electrode portions or the plurality of heat-generating bodies are disposed in chessboard patterns.

[7] A discharge control unit according to any one of Claims 3 through 6, wherein the discharge electrode includes an auxiliary common electrode portion for connecting the other end portions of the plurality of individual discharge electrode portions.

[8] A discharge control unit according to any one of Claims 1 through 7, wherein the discharge electrode includes the common electrode portion and the discharge portion and includes a conductive material layer formed on the surface of at least the common electrode portion of the discharge electrode.

[9] A discharge control unit according to any one of Claims 1 through 8, wherein the discharge control unit includes an electrode protection thin film layer formed on the surface of

the discharge electrode.

[10] A discharge control unit according to any one of Claims 1 through 9, wherein the discharge control unit includes a coating film covered on the discharge electrode other than the discharge portion.

[11] A discharge control unit according to Claim 10, wherein the discharge control unit includes recesses and projections formed on the surface of the coating film.

[12] A method for controlling discharge of a discharge control unit according to any one of Claims 1 through 11, comprising a step of carrying out multi-divided discharge control by dividing heating of the discharge electrode by means of the heat-generating portion into a plurality of times and repeating the same.

[13] A method for controlling discharge of a discharge control unit according to any one of Claims 1 through 11, wherein the method is comprised to be provided with a step of preheating at least the discharge electrode.

[14] A method producing a discharge control unit according to any one of Claims 1 through 11, wherein the step of forming a discharge electrode corresponding to the heat-generating body in the heat generation portion insulating film includes a step of forming a conductive material layer on the surface of at least any one of the common electrode portion of the discharge

electrode and the auxiliary common electrode portion thereof.

[15] A method for producing the discharge control unit according to any one of Claims 1 through 11, wherein the step of forming a discharge electrode includes a step of forming an electrode protection thin film layer on the surface of the discharge electrode.

[16] A method for producing the discharge control unit according to any one of Claims 1 through 11, wherein the step of forming a discharge electrode includes a step of forming a coating film covered on the discharge electrode other than the discharge portion.

[17] A method for producing the discharge control unit according to any one of Claims 2 through 11, wherein the method comprises: a step of forming an induction electrode on the upper surface of the heat generation portion insulating film, being spaced from the end portion of the heat-generating body side of the discharge electrode in the horizontal direction, and a step of forming an induction electrode insulating film, which covers the induction electrode, on the upper surface of the heat generation portion insulating film.